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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,614	06/23/2003	Todd Thomas	506422-0112	8806

27910 7590 12/29/2005

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EXAMINER

PECHHOLD, ALEXANDRA K

ART UNIT PAPER NUMBER

3671

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,614

Applicant(s)

THOMAS ET AL.

Examiner

Alexandra K. Pechhold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/17/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-38 and 42-45 is/are rejected.
- 7) ☒ Claim(s) 39-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/14/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 25, 26, 34-38, and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtgen (US 5,741,085) in view of Kai et al (US 4,532,271) and Bond et al (US 6,203,606) or Chang et al (US 4,839,404).**

Regarding claim 25, Wirtgen discloses a process for the repair of damaged roads, wherein the composition of the road surface to be repaired is suitably found by sampling and analysis, in order to obtain a reprocessed material showing optimum composition (Col 2, lines 37-49). The applicant's first three steps are disclosed by Wirtgen in claim 11. Furthermore, Wirtgen discloses the addition of emulsion to the asphalt (Col 2, lines 3-13 and Col 5, lines 35-36). Wirtgen also discloses selecting the mixture to be used after testing the mixture for performance, since Wirtgen states in column 2, lines 38-50 that sampling and analysis are performed and that a preprocessed material is obtained which shows optimum composition.

Wirtgen fails to specifically disclose testing for performance using a raveling test and moisture susceptibility test. Kai teaches testing paving material using a raveling test (Table 4). Bond and Chang both teach testing paving material using a moisture

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susceptibility test. Bond states that moisture susceptibility is one of the specifications tested in making asphalt (Col 1, lines 27-29). Chang teaches preparing an asphalt sample and subjecting it to the "Texas Boiling Test for Evaluating Moisture Susceptibility of Asphalt Mixtures" and the "Texas Freeze-Thaw Pedestal Test for Evaluating moisture Susceptibility for Asphalt Mixtures" (see Examples in Col 4) to indicate adhesion characteristics. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sampling and analysis in the method of Wirtgen to include a raveling test as taught by Kai and moisture susceptibility test as taught by Bond or Chang, since it is well known in the art of paving to have the asphalt undergo testing to be able to analyze the material properties, and Kai, Bond, and Change are all concerned with ascertaining the paving material's characteristics.

Regarding claim 26, Kai discloses using a stability test (Col 9, lines 21-61).

Regarding claim 34, Wirtgen discloses sampling and analysis in column 2, lines 37-39.

Regarding claim 35, Wirtgen discloses analyzing the samples in column 2, lines 37-45 which includes determining the composition and amounts to be added (which is a factor of the thickness of the layers). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to include determining the layer thicknesses, and variations between the samples, since Wirtgen broadly discloses analyzing the samples in column 2, lines 37-39 which envisions such routine analyzation.

Regarding claim 36, Wirtgen discloses crushing in the abstract.

Regarding claim 37, Wirtgen fails to specifically disclose that the samples are representative of variations in the road. Yet in the sampling and analysis (Col 2, lines 37-39), it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to take samples representative of variations in the road, since it is well known in materials sampling to take representative samples.

Regarding claim 38, Wirtgen fails to specifically disclose that at least two different proposed asphalt emulsion mixtures are formulated and tested for performance before the mixture to be used for the road is selected. Yet it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to include formulating at least two asphalt emulsion mixes and testing them for performance, since Wirtgen already discloses formulating one asphalt emulsion mixture, and it has been held that mere duplication involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 42, Wirtgen discloses a process for the repair of damaged roads, wherein the composition of the road surface to be repaired is suitably found by sampling and analysis, in order to obtain a reprocessed material showing optimum composition (Col 2, lines 37-49). The applicant's first step is disclosed by Wirtgen in claim 11. Wirtgen discloses milling off the road surface and mixing in emulsion (Col 4, lines 54-63). Application to the road is also disclosed (Col 5, lines 23-29). Wirtgen fails to specifically disclose testing for performance using a raveling test and moisture susceptibility test. Kai teaches testing paving material using a raveling test (Table 4).

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Bond and Chang both teach testing paving material using a moisture susceptibility test. Bond states that moisture susceptibility is one of the specifications tested in making asphalt (Col 1, lines 27-29). Chang teaches preparing an asphalt sample and subjecting it to the "Texas Boiling Test for Evaluating Moisture Susceptibility of Asphalt Mixtures" and the "Texas Freeze-Thaw Pedestal Test for Evaluating moisture Susceptibility for Asphalt Mixtures" (see Examples in Col 4) to indicate adhesion characteristics. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sampling and analysis in the method of Wirtgen to include a raveling test as taught by Kai and moisture susceptibility test as taught by Bond or Chang, since it is well known in the art of paving to have the asphalt undergo testing to be able to analyze the material properties, and Kai, Bond, and Change are all concerned with ascertaining the paving material's characteristics.

Regarding claim 43, the method of Wirtgen fails to specifically disclose that determining if the road is thick enough to leave at least about an inch base after milling, determining if the road has a sound base, and determining if the road has good drainage. Wirtgen does disclose that the composition of the road surface to be repaired is suitably found by sampling and analysis (Col 2, lines 37-39). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to include initially evaluating the road base, its thickness, and road drainage, since obviously the base condition and depth need to be determined to know how much to mill of, and determining the drainage can be evaluated during sampling and analysis.

Regarding claim 44, Wirtgen discloses a surface treatment in claim 12.

Regarding claim 45, the product will inherently result from the process already disclosed as discussed above.

3. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtgen (US 5,741,085), Kai et al (US 4,532,271), Bond et al (US 6,203,606), and Chang et al (US 4,839,404) as applied to claim 25 above, and further in view of Kamel et al (US 5,284,509). The combination of Wirtgen, Kai, Bond, and Chang fails to disclose testing modulus or resilient modulus. Kamel teaches that improved temperature susceptibility is confirmed by pavement stiffness determinations carried out at -18 degrees C and by pavement resilient modulus tests (ASTM D-4123) carried out over a temperature range from 40 to 5 degrees C. (Col 20, lines 1-7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to include modulus or resilient modulus testing as taught by Kamel, since Kamel states in column 20, lines 1-7 that such testing is used to confirm superior temperature susceptibility.

4. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtgen (US 5,741,085), Kai et al (US 4,532,271), Bond et al (US 6,203,606), and Chang et al (US 4,839,404) as applied to claim 25 above, and further in view of Bailey et al (US 6,440,205). The combination of Wirtgen, Kai, Bond, and Chang fails to disclose testing the mixture for performance using a thermal cracking test. Bailey teaches BBR test results at several low temperatures, a temperature range at which thermal cracking is considered to be the main failure mode (see Tables 1, 4, 6, and 9).

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Measuring stiffness and m-values shown in Tables 1, 4, 6, and 9 can be interpreted as indicating that the paving binders have generally present good thermal cracking resistance (Col 19, lines 18-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to include thermal cracking testing as taught by Bailey, since Bailey states in column 19, lines 18-46 determining thermal cracking resistance is a useful characteristic to measure.

5. **Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtgen (US 5,741,085), Kai et al (US 4,532,271), Bond et al (US 6,203,606), and Chang et al (US 4,839,404) as applied to claim 25 above, and further in view of Bailey et al (US 6,440,205).** Kai discloses using a stability test (Col 9, lines 21-61), but the combination of Wirtgen, Kai, Bond, and Chang fails to disclose testing the mixture for performance using a thermal cracking test. Bailey teaches BBR test results at several low temperatures, a temperature range at which thermal cracking is considered to be the main failure mode (see Tables 1, 4, 6, and 9). Measuring stiffness and m-values shown in Tables 1, 4, 6, and 9 can be interpreted as indicating that the paving binders have generally present good thermal cracking resistance (Col 19, lines 18-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to include thermal cracking testing as taught by Bailey, since Bailey states in column 19, lines 18-46 determining thermal cracking resistance is a useful characteristic to measure.

6. **Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtgen (US 5,741,085), Kai et al (US 4,532,271), Bond et al (US 6,203,606), and**

Chang et al (US 4,839,404) as applied to claim 25 above, and further in view of Graf (US 5,114,483). The combination of Wirtgen, Kai, Bond, and Chang fails to disclose whether the emulsifier is cationic. Graf teaches a paving composition with a cationic emulsifier (claim 1), so that the emulsion breaks rapidly when mixed with aggregate, forming a workable paving composition (Col 2, lines 26-38). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Wirtgen to use an emulsifier that is cationic as taught by Graf, since Graf states in column 2, lines 26-38 that the emulsion breaks rapidly when mixed with aggregate, forming a workable paving composition.

Allowable Subject Matter

7. Claims 39-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed 4/14/05 have been fully considered but they are not persuasive.

The applicant argues that just because Kai teaches that raveling tests have been performed and Bond and Chang teach that moisture susceptibility tests have been performed, neither Kai nor Bond nor Chang suggests the desirability of performing both raveling and moisture susceptibility tests on the proposed asphalt mixture before

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selecting an asphalt mixture for reconstructing a paved road, as recited in claims 25 and 42. Indeed, there are numerous performance tests that can be used to ascertain the asphalt characteristics. But the Examiner maintains the rejection, and argues that one of ordinary skill in the art can select whatever methods of testing that are known and available and use these tests to determine certain characteristics. Moreover, independent claims 25 and 42 only recite using two such tests (raveling test and moisture susceptibility test), whereas the specification discloses using four tests, and applicant has not established that a unique result is reached by only using these two tests. The prior art cited indicates that the raveling test and moisture susceptibility test are both known and have been used in testing asphalt, each measuring a certain characteristic. Simply combining two well known tests as part of a method of selecting an asphalt emulsion mixture to be used in reconstructing a paved road is not beyond the realm of one of ordinary skill in the art. Those testing asphalt properties have a variety of testing methods available and can select whatever combination of tests desired to determine the characteristics of that asphalt, depending on what they want to know about the asphalt properties. This same argument applies to the dependent claims that recite other tests, since the prior art cited demonstrates that such testing is known and used, and therefore can be selected as part of a method of selecting an asphalt emulsion mixture if one chooses to know the characteristics revealed by such tests.

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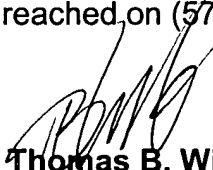
Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Pechhold whose telephone number is (571) 272-6994. The examiner can normally be reached on Mon-Thurs. from 8:00am to 5:30pm and alternating Fridays from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached on (571) 272-6998. The fax phone number for this Group is (703) 872-9306.


Thomas B. Will
Supervisory Patent Examiner
Group 3600

AKP
12/19/05